

What is claimed is:

1. A compensation module for the phase compensation of clock signals, in particular a compensation module for a telecommunications network or for a network device of a telecommunications network, comprising receiving means for receiving at least one first clock signal and a second clock signal, wherein the compensation module comprising
 - first delay means for delaying the at least one first clock signal by a first delay time,
 - second delay means for delaying the second clock signal by a second delay time, and
 - adjusting means for the phase adjustment of the second delay means, so that the delayed, second clock signal, present at the output end of the second delay means, is adapted to the phase of the delayed, at least one first clock signal present at the output end of the first delay means.
2. A compensation module according to Claim 1, wherein the first delay time and/or a start value for the second delay time are predetermined as a function of a maximum expected phase difference between the at least one first clock signal and the second clock signal and/or as a function of a maximum expected propagation time difference which is caused by transmission paths of different length used for the transmission of the at least one first clock signal and the second clock signal, respectively.
3. A compensation module according to Claim 1, wherein the first delay means are designed such that they delay the at least one first clock signal by at least a first delay time which is such that it corresponds to a maximum expected phase difference and/or a maximum expected propagation time difference between the at least one first clock signal and the second clock signal, which difference

is caused by transmission paths of different length used for the transmission of the at least one first clock signal and the second clock signal, respectively.

4. A compensation module according to Claim 1, wherein the second delay means are designed such that they delay the at least one second clock signal by at least a second delay time which is such that it corresponds to twice a maximum expected phase difference and/or twice a maximum expected propagation time difference between the at least one first clock signal and the second clock signal, which difference is caused by transmission paths of different length used for the transmission of the at least one first clock signal and the second clock signal, respectively.

5. A compensation module according to Claim 1, comprising selection means for selecting the at least one first delayed clock signal or the second delayed clock signal and/or the at least one first clock signal or the second clock signal, where the respective selected, at least one first delayed clock signal or second delayed clock signal and/or at least one first clock signal or second clock signal serves in particular to synchronise the compensation module.

6. A compensation module according to Claim 5, wherein the selection means are designed to select, for delay in the first delay means, that one of the at least one first clock signal or second clock signal which is identified by an item of master-slave-status information as a master synchronisation signal or which leads the respective other first or second clock signal in phase.

7. A compensation module according to Claim 5, wherein the selection means are designed to select the at least one

first delayed clock signal or the second delayed clock signal while the compensation module is in operation.

8. A compensation module according to Claim 1, wherein the adjusting means are designed to adjust the phase of the first delay means so that in particular when the first delayed clock signal is selected instead of the second delayed clock signal, the delayed first clock signal, present at the output end of the first delay means, is adapted to the phase of the delayed second clock signal present at the output end of the second delay means.

9. A compensation module according to Claim 1, wherein the adjusting means are designed to preferentially adjust the first delay time and/or second delay time to a first or second start value which is either predetermined and/or is determined upon each start-up of the compensation module, where a modification of the first delay time or second delay time, which increases the deviation of the first delay time or second delay time from the first or second start value respectively, is performed only upon the attainment of a predetermined first deviation tolerance value, while the converse applies upon the attainment of a second deviation tolerance value which is smaller than the first deviation tolerance value.

10. A compensation module according to Claim 1, wherein the adjusting means are designed such that, for the phase adjustment, they change the second delay time in stepped fashion.

11. A compensation module according to Claim 1, wherein the adjusting means are designed such that, for the phase adjustment, they change the second delay time of the second delay means in dynamic step sizes, the respective step size being modified as a function of a respective phase

difference between the delayed second clock signal, present at the output end of the second delay means, and the delayed first clock signal present at the output end of the first delay means.

12. A compensation module according to Claim 1, comprising program code which can be executed by a control means of a network device, in particular a control means on a console of a network device for a transmission network with a synchronous digital hierarchy.

13. A memory means, in particular a floppy disc, CD-ROM, digital versatile disc, hard disc-drive or the like, with a compensation module according to Claim 12 stored thereon.

14. A network device, in particular a network device for a transmission network with a synchronous digital hierarchy, with at least one compensation module according to Claim 1 and/or Claim 12.

15. A method of phase compensation between at least one first clock signal and a second clock signal which are transmitted to a compensation module, in particular a compensation module in a telecommunications network or in a network device of a telecommunications network, comprising the steps of

- delaying by the compensation module the at least one first clock signal by a predetermined first delay time to form a delayed first clock signal,
- delaying by the compensation module the second clock signal by a predetermined second delay time to form a delayed second clock signal, and
- modifying by the compensation module the second delay time such that the delayed second clock signal is adapted to the phase of the delayed, at least one first clock signal.